

piration reaches its minimum just before the cambium resumes its activity. The paper includes a rather extended inspection of the literature.—RAYMOND H. POND.

Ecology of woodland plants.—WOODHEAD¹³ has investigated the woodland plants near Huddersfield, England, and has made an important addition to the ecological literature that is rapidly developing in Great Britain. The subject is still new enough, however, for the author to preface his paper by a brief account of the study of ecology in Britain. The first section of the paper is physiographic, dealing with the woodland vegetation maps of the various areas under consideration. The second section is anatomical, discussing the effect of environment on structure. Under the head of dominant species, there are described the leaf, petiole, and rhizome of *Pteris aquilina*; the leaf, absciss-layer, and elongated bulbs of *Scilla festalis*; and the leaves of *Deschampsia flexuosa*, *Holcus mollis*, and *Vaccinium Myrtillus*. Under the head of secondary species, the leaves of *Heracleum Sphondylium*, *Lamium Galeobdolon*, and *Mercurialis perennis* are described. The vegetation of the Huddersfield district is naturally divided into three parallel zones: (1) the moss moor (1700–1000 feet altitude), the most exposed zone, dominated by *Eriophorum vaginatum* or on drier ridges by *Vaccinium Myrtillus*; (2) the millstone-grit plateau (1000–500 feet), with oak as the dominant tree, associated with birch and pine; (3) the Coal-measure area (500–200 feet), with deep and well-watered humus soil.—J. M. C.

Phycophaein.—TSWETT finds¹⁴ that phycophaein does not exist as such in the living body of the brown algae. He does find, however, that a colorless chromogen, soluble in water but insoluble in alcohol, is present. An extract made with distilled water contains this chromogen, but owing to its neutral reaction the solution becomes colored very slowly. Extraction with an alkaline solvent, such as ordinary tap water, gives a yellow solution, rapidly becoming brown by oxidation. Decoloration occurs when the reaction is made acid. Extracts of the thallus with 50 to 80 per cent. alcohol remain colorless. This work, done in REINKE'S laboratory, sustains his hypothesis of the *post-mortem* origin of phycophaein and refutes the generally accepted notion that it is a genuine pigment of the chromatophore. The remainder of the paper outlines the author's method for isolating the several pigments present in the chromatophore. The following are soluble in petroleum ether containing 10 per cent. alcohol; carotin, chlorophyllin α , fucoxanthin, and fucoxanthophyl. Chlorophyllin γ is not soluble in this reagent, but is soluble in alcohol and ether. The natural color of the brown algae results from a mixture of these pigments in the chromatophore.—RAYMOND H. POND.

¹³ WOODHEAD, T. W., Ecology of woodland plants in the neighborhood of Huddersfield. Jour. Linn. Soc. Bot. 37: 333–406. figs. 70. 1906.

¹⁴ TSWETT, M., Zur Kenntnis der Phaeophyceenfarbstoffe. Ber. Deutsch. Bot. Gesells. 24: 235–244. 1906.